



POULTRY FARM SANITATION

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INTRODUCTION

One of the most essential considerations in the profitable management of poultry, is the maintenance of health in the flock. Domestic birds are subject to a large number and variety of diseases, some of them highly contagious, most of them very difficult to eradicate once they have become established, and all of them a source of loss to the poultryman. Individual treatment and medication may be applied successfully in a limited number of cases, but usually will be found expensive and laborious. The most economical and satisfactory line of attack in combating disease, would appear, therefore, to lie in prevention and control. This involves an intelligent application of the principles of breeding, nutrition and sanitation, combined with prompt recognition of abnormal conditions as they occur, and careful, thorough and efficient treatment at the first sign of trouble in the flock.

In response to the heavy and increasing demand for information along these lines, the Poultry Branch has prepared leaflets dealing with specific diseases. Poultry raisers who are experiencing trouble with their flocks, are invited to write to the Department, explaining the symptoms, methods of feeding, age of birds and any other information which may assist in diagnosing the trouble, and leaflets dealing with the disease concerned, will be sent by mail.

RESISTANCE TO DISEASE

Of fundamental importance in the health and efficiency of the flock, is the inherent vigour of the birds. For this reason, only strong, healthy, well developed birds should be used for breeding, and rigid and continuous culling of weaklings should be practiced from the time of hatching, onwards. If new stock is introduced, it should be purchased only from flocks known to be high in stamina and free from disease, especially from such diseases as Bacillary White Diarrhoea (Pullorum disease), which is transmitted by means of the egg, from one generation to another.

Disease resistance may also be built up by good feeding. Recent studies in nutrition are demonstrating more and more the value of certain elements in the diet which are essential to health, many poultry troubles now being found to be directly traceable to dietary deficiencies and defects. Protein supplements, minerals and vitamin feeds especially have a valuable role to play in good nutrition, and their inclusion in adequate quantity and correct proportion, is found to have a marked effect not only on health, but on normal growth and development, on egg production, on hatchability, and on the food value of the eggs and meat used for human consumption.

PREVENTION OF DISEASE

Infectious diseases may be introduced into a flock by means of new birds brought in from outside, by exposure at poultry shows, by contamination from feed sacks, from the feet of visitors, from wild birds and animals, or from parasitic infestation. It is wise, therefore, to take precautions against such possibilities of infection by purchasing new stock from flocks known to be healthy and free from disease, by isolating new breeding stock and birds returned from shows, for a week or ten days before placing them with other birds, by excluding visitors from the poultry houses and yards, and by providing every possible means of guarding the flocks against infection from outside sources.

Peddlers, buyers of poultry, salesmen, etc., should be excluded from the poultry runs and houses, and their vehicles and crates should not be permitted on the premises.

Within the flock, an intelligent and conscientious programme of sanitation must be carried out so that the birds may live, eat and sleep in comfortable, clean and uncontaminated surroundings, and so that in case of an outbreak, its spread is checked as soon as possible. The house should be commodious, dry, sunny, well ventilated, free from draughts, and insulated against extremes of temperature. The floor should be made of cement or good lumber, and kept clean and well covered with a generous supply of dry litter. The entire house should be scraped, swept, scrubbed with soap or hot lye water, and the walls whitewashed at least once a year, preferably in the fall before the pullets are shut in for the winter. At this time, as well as at intervals throughout the year, all equipment and utensils should be thoroughly cleansed and disinfected, and the woodwork treated so as to keep down lice and mites. In the daily routine nothing is quite so important as the providing of fresh, clean water in clean vessels, designed and placed where they can least become polluted, and the feeding of good rations in clean containers, not in filthy litter or on contaminated ground.

The grounds surrounding the chicken house, which is one of the most fruitful sources of trouble, should be dry and well drained. If surface water and mud puddles collect, a generous covering of clean sand or gravel will do much to off-set the risk of pollution. The ideal system is to fence off land into yards which can be used in rotation, and thoroughly cultivated for garden use or sown to a crop when not in use for poultry. This will lessen the danger from soil-borne diseases and intestinal parasites, which constitute such a menace to young chicks and growing stock, and which are so rapidly propagated when the flock is required to occupy the same ground year after year without any attempt at cleaning and disinfection. If fencing and rotation of yards are not possible, then at least some means must be found for rearing the chicks on soil not recently used by adult birds, and preferably on hitherto unoccupied land. It is safer even to confine the chicks in small wire-floored runs or sun-porches, than to allow them free range which permits exposure to contamination from older birds.

CONTROL OF DISEASE

At the first symptoms of disease in any chicken, remove the bird at once, so that if there is danger of infection, measures can be taken immediately to safeguard the rest of the flock.

In the case of infectious diseases, little can be done to cure the individual, and efforts must be directed mainly towards checking the spread of infection. General control methods include isolation or destruction of sick birds, thorough cleaning out and disinfection of houses, yards and equipment, scalding of feed troughs and drinking vessels, burning of dead bodies and the litter from floor and nests, and the use of a mild disinfectant, such as potassium permanganate, in the drinking

water. Housing and feeding conditions should also be checked and a mild cathartic such as Epsom Salts may be administered to the entire flock.

In order to determine the exact nature of the disease and thus more effectively apply treatment, the poultry keeper should become familiar with the normal appearance of a bird, both externally and internally. External symptoms may sometimes be sufficient to indicate the cause of the trouble, but if there is any doubt, a post-mortem examination of the internal organs should be made. When by this means a disease has been determined in one or two birds, it can thereafter be more readily recognized in others by external symptoms.

INDICATIONS OF DISEASE

In checking up the general appearance of a bird, note first whether it is in poor flesh, in which case suspect tuberculosis, intestinal worms, or the presence of lice or mites. If the face, comb and wattles are very pale, this may indicate anaemia, tuberculosis, nutritional disease, or intestinal parasites. If deep red or purple, it may be cholera, blackhead, or some type of heart, lung or liver trouble. Discharge from the eyes and nostrils is a symptom of colds, and if accompanied by swelling in the face and a disagreeable odour, indicates roup. Ulcers in the mouth and throat may be canker or diphtheritic roup. Wry neck may be due to poisoning from mouldy or decayed foods, from garden sprays, rat poison or other accidental causes, or from the use of metal pans for giving chemicals in the drinking water. Presence of tapeworms may also cause wry neck. Limberneck, or paralysis of the muscles, which causes the neck to hang limp, is the characteristic symptom of botulism, a disease caused by feeding spoiled grain or decaying meat food. Drooping wings and ruffled feathers are very common symptoms and are not of much value in diagnosis, as they accompany many diseases. Lameness is one of the commonest of all symptoms. This may be due to bumblefoot, which is a swelling on the ball of the foot, or to scaly leg. Both of these, of course, are easily recognizable. Lameness may also be due to rheumatism, tuberculosis, tapeworms, coccidiosis, blackhead, poisoning, rickets, or various forms of paralysis. It is impossible to diagnose from this symptom alone, so that other factors may have to be taken into consideration before the exact cause may be determined.

POST-MORTEM APPEARANCE

For making a post-mortem examination, the following equipment is needed; a very sharp knife, a pair of strong shears for cutting through bones, a small pair of scissors, a table or box of convenient height on which to work, and a pan of water. Work in bright sunlight if at all possible, as the colour of various organs may be a valuable clue to the trouble. First wet the body thoroughly in water, then remove the feathers from the rear end of the breast bone. Lay the carcass on its back, and nail down the feet and the wings, cut the skin between the thighs and the body, and disjoint the legs at the hip joint by means of a downward pressure. Then cut the skin across the abdomen and strip it forward so that the breast and crop are exposed. With the knife, open the abdominal wall and cut forward through the ribs on each side, then through the wish bone with the shears, and remove the entire breast.

Liver: Note first the size and colour of the liver before removing any of the organs. A normal liver is an even chocolate brown. If congested, it may be a yellowish or dark red, very brittle, and covered with blood. In blackhead, there will usually be found yellow or greenish coloured areas, varying in size up to one inch in diameter. These are level with the surface of the liver and appear to be sunk down into the tissue. In tuberculosis, small white spots or raised nodules are found on the liver,

and frequently also on the spleen and on the surface of the intestines. Inflammation of the liver will cause it to be greatly enlarged and usually grey, mottled, or streaked on the surface.

Intestines: The intestines, if normal, are circular and greyish white in colour. They may be impacted or congested due to round worms or ptomaine poisoning. Presence of blood in certain areas and in the caeca, indicate worms or coccidiosis. To check this up, the intestines should be removed and slit open the entire length with a sharp knife or point of the scissors, and run through a pan of cold water. If round worms are present, they will float out and sink to the bottom, appearing like pieces of white string. Tape worms are smaller and segmented, and float to the surface. Caecum worms and gizzard worms are exceedingly small, but can be seen in good light by careful examination of the areas they inhabit.

Oviduct and Ovary: After removing the digestive organs, examine the oviduct, which is a folded pinkish-white membrane, lying close to the body wall. Rupture of the wall of the oviduct may be found, and eggs passing out into the body cavity. A whole egg or several eggs may be found impeded in their passage down, or a broken egg may be present as the result of injury. A normal ovary has the appearance of a bunch of grapes, with a large number of yolks in different stages of development. In hens that are carriers of Pullorum Disease, a number of discoloured and misshapen yolks will be found.

Kidneys: Behind the oviduct, and close against the backbone, are the kidneys, each of them consisting of three lobes. These may be enlarged or congested with blood. If they are very pale and marked by a network of fine lines, a deficiency of vitamins in the feed is indicated.

Lungs: The lungs, if normal, should be bright pink in colour and a somewhat flattened oval in shape. If congested as in cholera, they are usually dark in colour, and will be found to sink in water, while a normal lung floats. Inflammation due to pneumonia, gives a dark red or a grey colour, and yellow serum and blood pour from the surface when cut. The lungs connect with the windpipe through the two bronchial tubes. These should be slit right up into the mouth to find any inflammation or accumulation of pus due to bronchitis.

Oesophagus or Gullet: This is the passage through which food passes on its way to the crop. On its surface and in the mouth and throat may be found small, white, cheesy postules. If these are accompanied by a roup-like condition of the eyes, face and nostrils, together with paleness and mottling of the kidneys, the bird has been suffering from nutritional roup.

The above list of symptoms is by no means complete, and covers only a few of the most commonly occurring diseases. In many cases, it will be found impossible to make a definite diagnosis without a bacteriological examination. Where this is considered advisable, a typical specimen (preferably alive) may be sent, express prepaid, to the Veterinary Laboratory, Department of Agriculture, Parliament Buildings, Edmonton. In order to facilitate diagnosis, this should be accompanied by a full description of the symptoms and the general conditions under which the flock is kept, together with a detailed history of the outbreak, and an account of the measures taken to control the trouble.